



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,344	10/29/2003	Christian Schmid	200315617-1	8104
22879	7590	10/28/2008		
HEWLETT PACKARD COMPANY P O BOX 272400, 3404 E. HARMONY ROAD INTELLECTUAL PROPERTY ADMINISTRATION FORT COLLINS, CO 80527-2400				
			EXAMINER SHAH, MANISH S	
			ART UNIT 2853	PAPER NUMBER
NOTIFICATION DATE	DELIVERY MODE			
10/28/2008	ELECTRONIC			

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

JERRY.SHORMA@HP.COM  
mkraft@hp.com  
ipa.mail@hp.com



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents  
United States Patent and Trademark Office  
P.O. Box 1450  
Alexandria, VA 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/696,344

Filing Date: October 29, 2003

Appellant(s): SCHMID ET AL.

---

Gary P. Oakeson  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 07/02/2008 appealing from the Office action  
mailed 06/05/2008.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

No amendment after final has been filed.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

20030226474	Mammen et al.	12-2003
JP 63-0610065	Pentel et al.	03-1988
5279652	Kaufmann et al.	1-1994

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-2, 4-7, 9-12 & 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pentel KK (# JP 63-061065) in view of Mammen et al. (# US 2003/0226474 A1).

Pentel KK discloses a highlighter ink composition including (a) from 2 to 17 wt% of coloring material (b) from 65 to 85 wt% of an organic solvent; and (c) from 0.5 to 3 wt% of acid compound, wherein acid compound is ascorbic acid and coloring material is dye or pigment (see Abstract), and the value of pKa is constant to the material, and the ascorbic acid inherently has a pKa value of 4.2. So Pentel KK discloses the acid buffer

having a pKa from about 2 to 6, more preferably from 4 to 6. They also disclose that the acid buffer includes a weak acid (ascorbic acid) or weak base (magnesium salt of ascorbic acid) (see Abstract).

Pentel KK differs from the claim of the present invention is that (1) the highlighter colorant that is an acid-functionalized pigment or a fluorescent colorant. (2) The liquid vehicle includes water or diethylene glycol. (3) The highlighter colorant selected from Acid Blue 9.

Mammen et al. discloses a method of reducing smear (see Abstract; [0277]) during highlighting including the highlighter composition having a fluorescent highlighter colorant (see Examples), and a liquid vehicle, wherein liquid vehicle is water, diethylene glycol, propylene glycol (see Examples), and highlighter colorant is fluorescent and selected from Acid Blue 9 ([0111], see Example: 3-4).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the highlighter composition of Pentel KK by the aforementioned teaching of Mammen et al. in order to have smear resistance highlighter ink composition, which gives high quality image without smear.

2. Claims 3 & 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pentel KK (# JP 63-061065) in view of Mammen et al. (# US 2003/0226474) as applied to claims 1-2, 4-7, 9-12 & 27-28 above, and further in view of Kaufmann et al. (# US 5279652).

Pentel KK and Mammen et al. discloses all the limitation of the claimed invention accept that the acid buffer is succinic acid and the colorant is the acid functionalized pigment.

Kaufmann et al. teaches that to get the good crystallizing property, marking ink includes the acid buffer, which is selected from succinic acid (column: 4, line: 40-66) and colorant is pigment (column: 9, line: 40-50).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the acid compound in the highlighter composition of Pentel KK as modified by the aforementioned teaching of Kaufmann et al. in order to get the excellent crystallizing characteristic, which gives high quality image with less smear.

3. Claims 13-18 & 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mammen et al. (# US 2003/0226474) in view of Pentel KK (# JP 63-061065) and Kaufmann et al. (# US 5279652).

Mammen et al. discloses a method of reducing smear (see Abstract; [0277]) during highlighting including the steps of ink-jet printing an ink jet ink to form an image on a substrate ([0277]); applying a highlighter composition to the image ([0277]; see Examples), the highlighter composition including a highlighter colorant, which is fluorescent colorant ([0111]; see Examples), and a liquid vehicle (see Examples), and highlighter colorant selected from Acid Blue 9 ([0111]; see Examples: 3-4).

Mammen et al. differs from the claim of the present invention is that (1) the acid buffer has a pKa from 2 to 6, more preferably 4 to 6, wherein acid buffer is selected

from ascorbic acid, acetic acid. (2) The acid buffer is succinic acid. (3) The acid buffer is configured for reducing mobility of colorants in the inkjet ink upon therewith.

Pentel KK discloses a highlighter ink composition including (a) from 2 to 17 wt% of coloring material (b) from 65 to 85 wt% of an organic solvent; and (c) from 0.5 to 3 wt% of acid compound, wherein acid compound is ascorbic acid and coloring material is dye or pigment (see Abstract), and the value of pKa is constant to the material, and the ascorbic acid inherently has a pKa value of 4.2. So Pentel KK discloses the acid buffer having a pKa from about 2 to 6, more preferably from 4 to 6. They also disclose that the acid buffer is configured for reducing mobility of colorants in the inkjet ink upon therewith and the acid buffer includes a weak acid (ascorbic acid) or weak base (magnesium salt of ascorbic acid) (see Abstract).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the acid compound in the highlighter composition of Mammen et al. by the aforementioned teaching of Pentel KK in order to get the excellent drying characteristic, which gives high quality image with less smear.

Kaufmann et al. teaches that to get the good crystallizing property, marking ink includes the acid buffer, which is selected from succinic acid (column: 4, line: 40-66).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the acid compound in the highlighter composition of Mammen et al. by the aforementioned teaching of Kaufmann et al. in order to get the excellent crystallizing characteristic, which gives high quality image with less smear.

4. Claims 19-26 & 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mammen et al. (# US 2003/0226474) in view of Pentel KK (# JP 63-061065) and Kaufmann et al. (# US 5279652).

Mammen et al. discloses a method of reducing smear (see Abstract; [0277]) during highlighting including the steps of ink-jet printing an ink jet ink to form an image on a substrate ([0277]); applying a highlighter composition to the image ([0277]; see Examples), the high lighter composition including a highlighter colorant ([0111]; see Examples), and a liquid vehicle (see Examples). They also disclose that the inkjet colorant is selected from pigment or water-soluble dye or mixture thereof ([0277]); and the liquid vehicle includes a member selected from water, diethylene glycol and propylene glycol (see Examples).

Mammen et al. differs from the claim of the present invention is that (1) the acid buffer has a pKa from 2 to 6, more preferably 4 to 6, wherein acid buffer is selected from ascorbic acid and acetic acid. (2) The acid buffer is succinic acid.

Pentel KK discloses a highlighter ink composition including (a) from 2 to 17 wt% of coloring material (b) from 65 to 85 wt% of an organic solvent; and (c) from 0.5 to 3 wt% of acid compound, wherein acid compound is ascorbic acid and coloring material is dye or pigment (see Abstract), and the value of pKa is constant to the material, and the ascorbic acid inherently has a pKa value of 4.2. So Pentel KK discloses the acid buffer having a pKa from about 2 to 6, more preferably from 4 to 6. They also disclose that the acid buffer is configured for reducing mobility of colorants in the inkjet ink upon

therewith and the acid buffer includes a weak acid (ascorbic acid) or weak base (magnesium salt of ascorbic acid) (see Abstract).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the acid compound in the highlighter composition of Mammen et al. by the aforementioned teaching of Pentel KK in order to get the excellent drying characteristic, which gives high quality image with less smear.

Kaufmann et al. teaches that to get the good crystallizing property, marking ink includes the acid buffer, which is selected from succinic acid (column: 4, line: 40-66).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the acid compound in the highlighter composition of Mammen et al. by the aforementioned teaching of Kaufmann et al. in order to get the excellent crystallizing characteristic, which gives high quality image with less smear.

#### **(10) Response to Argument**

##### **(10)A. Rejection of claims 1-2, 4-7 and 9-12 over Pantel in combination with Mammen.**

**Appellant argues that the combination of the Pentel and Mammen does not disclose the element of an acid buffer, and specifically Pentel never mentions for what purpose the specific ascorbic acid derivative is used.**

According to the present claim language, as long as reference has the same claimed chemical within the appellant's claimed range, then it has the same function

and therefore solves the same purpose. In the rejection of claims 1-2, 4-7 & 9-12, because Pentel is the primary reference, it doesn't require reasoning why ascorbic acid is used. However, Pentel in embodiment 1 & 3, clearly teaches that the ink is having 1 part of L-ascorbic acid, which is within appellant's claimed range. Therefore highlighter ink having an acid would have been obvious in order to solve the same problem. The pKa of ascorbic acid is from 4.2 to 11.6. Therefore, if you have ascorbic acid with pKa of 4.2, then it functions as a weak acid, even if the reference intended it for a different purpose. Appellant in their own specification discloses that that acid buffer used is ascorbic acid. Since Patel also teaches that highlighter ink contains ascorbic acid, it reads on the present claim language of an "acid buffer."

Appellant also argued that the Mammen teaches away from the addition of acid. However, Mammen fails to disclose that the addition of acid is problematic. More importantly, the secondary Mammen reference is used to show that the highlighter composition with a fluorescent highlighter colorant (see Examples), and a liquid vehicle, wherein liquid vehicle is water, diethylene glycol, propylene glycol (see Examples), and the highlighter colorant is fluorescent and selected from Acid Blue 9 ([0111], see Example: 3-4). Therefor it would have been obvious to combine Pentel and Mammen.

**(10)B. Rejection of claims 27-28 over Pantel in combination with Mammen.**

**Appellant argues that the Pentel does not discloses an acid buffer is weak acid or weak base.**

Appellant discloses in their own specification paragraph [0011] that the weak acid has pKa value more than 3. The pKa value of ascorbic acid is a material constant that is more than 3. Therefore Pentel's acid buffer is a weak acid. Pentel also discloses that ink comprises magnesium salt of ascorbic acid, which is a weak base. However, applicant didn't give specific name of the weak acid or base. Therefore Pentel reads on the present claimed language.

**(10)C. Rejection of claims 3 and 8 over Pantel in combination with Mammen and Kaufmann.**

**Appellant argues that the combination of the Pentel, Mammen and Kaufmann does not discloses use a succinic acid as an acid buffer, and specifically Kaufmann does not use succinic acid as an acid buffer.**

Appellant argued that the succinic acid in the Kaufmann reference is an anti-blocking agent. However, the claimed "acid buffer" is merely interpreted as any acid and the reasoning behind its use is considered irrelevant. Therefore it is proper to combine the Kaufmann reference with Pentel and Mammen et al.

Appellant argued that substitution of the specific ascorbic acid derivative with succinic acid is improper, which is not persuasive. Pentel clearly discloses highlighter comprises acid compound, selected from ascorbic acid, etc. which means any other

acid also can be used. Therefore, it is proper to substitute ascorbic acid with succinic acid as taught by Kaufmann.

Appellant argued the Kaufmann did not disclose the acid-functionalized pigment. However, applicant didn't define or give any particular name of the acid functionalized pigment in the specification, and Kaufmann discloses the Pigment Red 112. Therefore it is proper to combine Kaufmann with Pentel and Mammen. Also, the primary reference Pentel also discloses in Embodiment 4, that the ink composition includes Fuji IK Blue (processed pigment) with ascorbic acid. Therefore the pigment used in Pentel is also acid functionalized pigment.

**(10)D. Rejection of claims 13-18 and 19-26 over Mammen in combination with Pentel and Kaufmann.**

Appellant argues that the Mammen is teaches away from using an acid-containing high lighter ink. Mammen ink is an alkaline ink.

Mammen teaches in paragraph ([102]) to adjust the pH of the final ink composition in alkaline range. However, appellant's claimed an ink composition having acid buffer having pKa from 2 to 6, which is different that the pKa of the final ink composition. The claim only requires that the buffer have this range, not the final composition. Pentel teaches that to get the excellent crystallizing characteristic, and less smear image, ink having the acid buffer with pKa from 4.2 to 11, therefore it would have been obvious to incorporate the acid buffer taught by Pentel in to Mammen.

Mammen teaches all the limitations of the claimed invention except that the adding acid

buffer in the ink composition, and Pentel teaches that. Therefore it would have been obvious to add the acid buffer in to the ink composition of Mammen.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Manish S. Shah/

Primary Examiner, Art Unit 2853

10/14/2008

Conferees:

Stephen Meier /SM/

Darren Schuberg /D. S./  
TQAS, TC 2800